

AIR MONITORING SUMMARY REPORT



**SA Recycling – Bakersfield
2000 E. Brundage Lane
Bakersfield, California**

PREPARED FOR:

**CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL
HAZARDOUS WASTE MANAGEMENT PROGRAM
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PREPARED BY:

**GEOCON CONSULTANTS, INC.
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Project No. S9850-03-21
December 20, 2016

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Hazardous Waste Management Program
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Subject: AIR MONITORING SUMMARY REPORT
SA RECYCLING - BAKERSFIELD
2000 E. BRUNDAGE LANE
BAKERSFIELD, CALIFORNIA 93307-2734
CONTRACT NO. 15-T4124 A-1


Dear Mr. Benelli:


In accordance with the above-referenced contract, Geocon has prepared this Air Monitoring Summary Report for the above-referenced metal shredding/recycling facility. The California Department of Toxic Substances Control (DTSC) requested air monitoring to evaluate the potential for off-site migration of airborne particulates, toxic organic compounds, and asbestos from metal shredding/recycling facilities. The report summarizes the air monitoring activities performed including sample collection, laboratory analysis, and the results of a data quality assessment. The DTSC intends to use these results to assess the potential impacts from air emissions from metal shredding and metal shredding/recycling operations.


We appreciate the opportunity to work with the DTSC on this project. Please let us know if you have questions concerning the report or we may be of further service.


Sincerely,

GEOCON CONSULTANTS, INC.


Josh Ewert, PG
Project Geologist




Jim Brake, PG
Senior Geologist



IDENTIFICATION FORM

Document Title: Air Monitoring Summary Report
SA Recycling - Bakersfield

Site Location: 2000 E. Brundage Lane, Bakersfield, CA 93307-2734

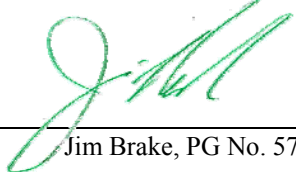
Contract No.: 15-T4124 A-1

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Geocon Project Manager:

Approval:  _____ Date: December 20, 2016
Josh Ewert, PG No. 9096

This Report has been prepared for the California Environmental Protection Agency (CalEPA), DTSC. The material herein is not to be disclosed to, discussed with, or made available to any person(s) for any reason without prior express approval of the appropriate responsible DTSC officer.

APPROVAL FORM

Document Title: Air Monitoring Summary Report
SA Recycling - Bakersfield

Site Location: 2000 E. Brundage Lane, Bakersfield, CA 93307-2734

Contract No.: 15-T4124 A-1

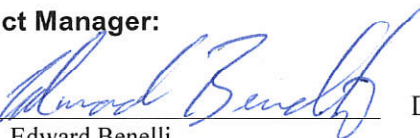
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Geocon Project Number: S9850-03-21

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Approval:

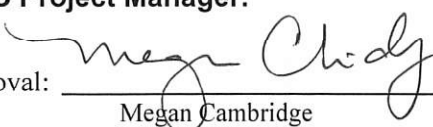

Edward Benelli

Date:

1/13/2017

DTSC Project Manager:

Approval:


Megan Cambridge

Date:

1/25/17

DISTRIBUTION LIST

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California Environmental Protection Agency

DTSC

Hazardous Waste Management Program

Megan Cambridge, Project Manager (1 hard-copy, e-copy)

California Environmental Protection Agency

DTSC

Hazardous Waste Management Program

Josh Ewert, PG and Jim Brake, PG (project file)

Geocon Consultants, Inc.

TABLE OF CONTENTS

AIR MONITORING SUMMARY REPORT SA RECYCLING - BAKERSFIELD

PAGE

IDENTIFICATION FORM	i
APPROVAL FORM	ii
DISTRIBUTION LIST	iii
TABLE OF CONTENTS	iv
ACRONYMS AND ABBREVIATIONS.....	vi
1.0 INTRODUCTION	1
1.1 Background	1
1.2 Responsible Agency.....	2
1.3 Project Contact Information.....	2
2.0 SITE DESCRIPTION	4
2.1 Facility Description.....	4
2.2 Regional Climate and Wind Direction.....	5
3.0 METHODS AND PROCEDURES.....	6
3.1 Pre-Field Activities	6
3.2 Sampling Locations.....	6
3.3 Sampling Equipment.....	6
3.4 Calibration and Leak Check Testing.....	8
3.4.1 TSP Calibration.....	8
3.4.2 PM ₁₀ and PM _{2.5} Calibration.....	9
3.4.3 PCB Calibration	9
3.4.4 Formaldehyde and Asbestos Calibration	10
3.5 Air Sampling Description	10
3.5.1 Test 1.....	10
3.5.2 Test 2.....	11
3.5.3 Test 3.....	12
3.6 Meteorological Conditions.....	12
3.7 Packaging and Shipping.....	12
3.8 Laboratory Analysis.....	13
3.9 Variance from SAP	14
4.0 RESULTS	15
4.1 Analytical Results	15
4.1.1 TSP.....	15
4.1.2 PM ₁₀	15
4.1.3 PM _{2.5}	15
4.1.4 Asbestos	16
4.1.5 PCBs	16
4.1.6 Formaldehyde	16
4.1.7 VOCs.....	16
4.2 Data Quality Analysis.....	16
4.3 Meteorological Data.....	16
5.0 REPORT LIMITATIONS.....	18
6.0 REFERENCES.....	19

TABLE OF CONTENTS (Continued)

FIGURES

1. Vicinity Map
2. Site Plan

PHOTOGRAPHS 1 through 5

TABLES – IN-TEXT (Identified by the “T” Preface)

- T1.3 Personnel Contact Information and Title
- T3.3A Sampling Analytes, Media and Equipment
- T3.3B Sampler Spacing Requirements
- T3.4.1 TSP Sampler Flow Rates and Total Flows
- T3.4.2 PM10 and PM2.5 Sampler Flow Rates
- T3.4.3 PCB Sampler Flow Rates and Total Flows
- T3.5 Sample Times and Facility Operations
- T4.3 Meteorological Data Per Test

TABLES – POST-TEXT

1. Summary of Gravimetric and Metals Analytical Data – TSP
2. Summary of Gravimetric and Metals Analytical Data – PM₁₀
3. Summary of Gravimetric and Metals Analytical Data – PM_{2.5}
4. Summary of Asbestos Analytical Data
5. Summary of PCB Analytical Data
6. Summary of Formaldehyde Analytical Data
7. Summary of TOS Analytical Data

APPENDICES

- A. Health and Safety Plan
- B. Geocon Field Logs
- C. TSP Calibration Worksheets
- D. Sampling Summary, Data Log, and Alarm Log - PM₁₀ Sampling Equipment
- E. Sampling Summary, Data Log, and Alarm Log – PM_{2.5} Sampling Equipment
- F. PUF Calibration Worksheets
- G. SARB’s Meteorological Data and Activity Log
- H. Analytical Reports
- I. Data Quality Assessment Report
- J. Wind Rose Diagrams

ABBREVIATIONS AND ACRONYMS	
aka	Also known as
AHERA	Asbestos Hazard Emergency Response Act
AQMD	Air Quality Management District
CFR	Code of Federal Regulations
CLN	CHESTER LabNet
COC	Chain-of-custody
COPC	Chemical of potential concern
DTSC	Department of Toxic Substances Control
EAT	Eurofins Air Toxics
ECS	Eurofins Calscience
EMSL	EMSL Analytical, Inc.
HSP	Health and safety plan
in-Hg	Inches of mercury pressure
L/min	Liters per minute
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate
m ³	Cubic meter
m ³ /min	Cubic meter per minute
MPH	Miles per hour
MRP	Metal recovery plant
NELAP	National Environmental Laboratory Accreditation Program
NVLAP	National Voluntary Laboratory Accreditation Program
PCB	Polychlorinated biphenyls
PM ₁₀	Particulate matter less than 10 µm
PM _{2.5}	Particulate matter less than 2.5 µm
PTFE	Polytetrafluoroethylene
PUF	Polyurethane foam
QA/QC	Quality assurance/ quality control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SARB	SA Recycling Bakersfield
SARTI	SA Recycling Terminal Island
SB	Senate Bill
SMM	Sims Metal Management
TEM	Transmission electron microscopy
Tisch	Tisch Environmental
TOS	Toxic organic species
TSP	Total suspended particulates
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compounds
XRF	X-ray fluorescence
°F	Degrees Fahrenheit

**AIR MONITORING SUMMARY REPORT
SA RECYCLING – BAKERSFIELD
CONTRACT NO. 15-T4124 A-1**

1.0 INTRODUCTION

Geocon Consultants, Inc. prepared this Air Monitoring Summary Report in compliance with California Department of Toxic Substances Control (DTSC) Contract Number 15-T4124 A-1, Start Work Order #1. This report summarizes air monitoring performed at the SA Recycling – Bakersfield (SARB) located at 2000 E. Brundage Lane (the Site) in Bakersfield, California (Figure 1, Vicinity Map). The work was conducted in accordance with the DTSC-approved *Sampling and Analysis Plan* (SAP) dated September 30, 2016 (Geocon, 2016).

1.1 Background

Per the DTSC's Start Work Order #1 dated July 21, 2016, metal shredding/recycling facilities process end-of-life vehicles, appliances, and other forms of scrap metal to recover iron, steel, aluminum, and copper for re-use in new metal products. The metal shredding process generates large amounts of metal shredder waste, which consists of plastics, rubber, glass, foam, fabrics, automobile fluids, dirt, and residual metals. The metal shredding process can also potentially create significant amounts of environmental contamination in the forms of stormwater runoff, contaminated soil, contaminated groundwater, and fugitive air emissions. The purpose of the air monitoring was to assess the potential for fugitive air emissions from facilities generating metal shredding waste.

Although metal shredding waste typically does not exceed the federal regulatory levels established by the Resource Conservation and Recovery Act (RCRA), metal shredder waste has been regulated as a California-only, non-RCRA hazardous waste since 1984 because residual levels of copper, lead, and zinc often exceed California's more stringent regulatory thresholds. Six large metal shredding facilities are currently authorized by DTSC to conduct metal shredding operations. Five of the facilities treat the metal shredding waste with a cement product which is intended to reduce the solubility of the metals and render the waste less hazardous. The sixth facility transfers their waste out of state for further processing. The treated waste is then disposed of in Class II or Class III landfills, where it is largely used as alternative daily cover.

Senate Bill (SB) 1249 (Hill, Chapter 756, Statutes of 2014) became law on January 1, 2015 and authorizes DTSC "to adopt regulations establishing alternative management standards for metal shredding facilities for hazardous waste management activities within the jurisdiction of the Department of Toxic Substances Control, that would apply in lieu of the hazardous waste management standards if the department performs specified actions" (SB 1249, Hill). SB 1249 authorizes the DTSC to consider the development of alternative management standards for metal shredding facilities. The DTSC has

developed a 3-year plan to conduct the evaluation authorized by SB 1249, which includes an assessment of the potential impacts from air emissions.

The SAP describes activities to monitor air at the following metals shredding facilities:

- SARB in Bakersfield, California,
- SA Recycling – Terminal Island (SARTI) located at 901 New Dock Street in Terminal Island, California, and
- Sims Metal Management (SMM) located at 699 Seaport Boulevard in Redwood City, California

These three facilities were selected to represent examples of larger (SARTI, SMM) and smaller (SARB) metal shredding/recycling facilities that operate in a variety of different geographic conditions and under the jurisdiction of varied local Air Quality Management Districts (AQMD). Information collected from the air monitoring events will be used to develop regulations establishing alternative management standards for metal shredding facilities for hazardous waste management activities.

1.2 Responsible Agency

DTSC is the lead regulatory agency overseeing this air monitoring program. DTSC regulates hazardous waste in California, under the authority of RCRA and the California Health and Safety Code.

1.3 Project Contact Information

The title/responsibility, names, phone numbers, and e-mail addresses of personnel associated with the air monitoring project are summarized in Table T1.3:

Table T1.3 – Personnel Contact Information and Title				
Agency/Company	Name	Title/Responsibility	Phone Number	E-mail Address
DTSC	Ed Benelli	Contract Manager	916.324.6564	Edward.Benelli@dtsc.ca.gov
DTSC	Megan Cambridge	Project Manager	916.322.4233	Megan.Cambridge@dtsc.ca.gov
Geocon	Jim Brake	Program/Quality Assurance Manager	916.852.9118	brake@geoconinc.com
Geocon	Josh Ewert	Project/Technical Manager	916.852.9118	ewert@geoconinc.com
CHESTER LabNet	Sheri Meldstab	Inorganic Lab Manager and QA/QC Coordinator	503.624.2183	sheldstab@chesterlab.net

Table T1.3 – Personnel Contact Information and Title				
Agency/Company	Name	Title/Responsibility	Phone Number	E-mail Address
EMSL	Michael Chapman	Industrial Hygiene Client Services Manager	800.755.1794	mchapman@EMSL.com
Eurofins Calscience	Alan Kemp	Northern California Operations Manager	925.786.8606	alankemp@eurofinsUS.com
Eurofins Air Toxics	Kelly Buettner	Air Toxics Project Manager	916.605.3378	kellybuettner@eurofinUS.com

2.0 SITE DESCRIPTION

2.1 Facility Description

Site Name:	SA Recycling – Bakersfield
Site Address:	2000 E. Brundage Lane, Bakersfield, CA 93307-2734
County:	Kern
Site Operator:	SA Recycling, LLC
Local AQMD:	San Joaquin Valley Air Pollution Control District
Local AQMD Contact:	David Garner (559) 230-5938

SARB is located approximately 3 miles southeast of downtown Bakersfield, on the northern side of Brundage Lane. The metal shredder is in the center of the Site while the northernmost portion comprises a metal recovery plant (MRP) (Figure 2, Site Plan). Railroad tracks along the eastern border of the Site are used to transport materials to and from the Site by rail. According to SARB's webpage, the recycling center services the entire San Joaquin Valley and accepts steel, aluminum, copper, tin, appliances, junk cars, cans, and many other types of scrap metal (SARB website, 2016).

Properties surrounding the Site are used for commercial and both light- and heavy-industrial purposes. These properties include:

- a scrap metal processing center adjacent to the north,
- a semi-trailer sales and repair shop adjacent to the northeast,
- a concrete recycling plant adjacent to the east,
- an asbestos abatement and insulation/foam installation company and warehouse adjacent to the east-southeast,
- a truck rental facility across E. Brundage Lane to the south,
- warehouses storing cotton across Industrial Street to the west, and
- a valve manufacturing and sales facility across Industrial Street to the northwest

Surrounding properties and facilities are shown on Figure 2, Site Plan.

2.2 Regional Climate and Wind Direction

Monthly average temperatures range from the mid-30s °F in December to the low-100s °F in July. Annual average precipitation for the Bakersfield is 5.83 inches per year, with the lowest precipitation occurring from July through September (WRCC, 2016). Wind direction data is obtained from the Meadows Field Airport, located approximately 7.1 miles northwest of SARB (<http://mesonet.agron.iastate.edu> , 2016). The average wind speed ranges from 4.8 mph in January to 7.5 mph in June. Higher wind speeds typically occur from April to August. The most common wind direction throughout the year is from the northwest. During the month of October, the average wind speed is 4.8 miles per hour (mph) with predominant wind directions of west-northwest, east, and east-southeast.

3.0 METHODS AND PROCEDURES

This section summarizes the methods and sampling procedures utilized during the air monitoring event. Detailed information and protocols for field methods are provided in the SAP (Geocon, 2016).

3.1 Pre-Field Activities

Geocon staff performed the following pre-field activities prior to the field activities:

- Performed a site visit on August 16, 2016, to meet with SARB and DTSC staff and identify the sample locations at the Site.
- Prepared a site-specific health and safety plan (HSP) to provide guidelines on the use of personal protective equipment and health and safety procedures to be implemented during the field activities. Field activities were conducted in accordance with the HSP prepared for the air monitoring at SARB. A copy of the HSP is in Appendix A.
- Retained CHESTER LabNet (CLN), a National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory in Tigard, Oregon, to provide gravimetric and metals analysis of air samples.
- Retained EMSL Analytical Inc. (EMSL), a National Voluntary Laboratory Accreditation Program (NVLAP) and NELAP-certified laboratory in Cinnaminson, New Jersey, to provide asbestos and volatile organic compounds (VOC) analysis of air samples.
- Retained Eurofins Calscience (ECS), a California ELAP and NELAP-certified laboratory in Garden Grove, California, to perform polychlorinated biphenyls (PCB) analysis of air samples.
- Retained Eurofins Air Toxics (EAT), a California ELAP and NELAP-certified laboratory in Folsom, California, to perform formaldehyde analysis of air samples.

3.2 Sampling Locations

Air samples were collected from four locations at the Site with one upwind (SARB1), one downwind (SARB2), and two crosswind locations (SARB3 and SARB4). SARB5 was a collocated duplicate sampling location for SARB2 and was sampled in accordance with the schedule for quality assurance/quality control sampling schedule in the SAP. Sample locations are shown on Figure 2. Photos 1 through 5 provide images of the sample equipment in reference to the sample locations.

3.3 Sampling Equipment

At each sampling location, air samples were collected using the equipment in Table T3.3A:

Table T3.3A – Sampling Analytes, Media and Equipment		
Analytes	Sample Media	Sampler
Total suspended particulates (TSP), Metals	8"x10" Quartz fiber filter	TE-5170V high-volume
Particulate matter (PM) less than 10 micrograms (µm) (PM ₁₀), Metals	46.2 mm-diameter PTFE Teflon™ with integral support ring with a pore size of 10 µm	TE-Wilbur10 low-volume
PM less than 2.5 µm (PM _{2.5}), Metals	46.2 mm-diameter PTFE Teflon with integral support ring with a pore size of 10 µm	TE-Wilbur2.5 low-volume
Asbestos	Cartridge with a 25-mm-diameter mixed cellulose ester fiber filter	Gillian GilAir 3 personal air pump
PCBs	3-inch thick polyurethane foam (PUF) plugs	TE-1000 PUF high-volume air sampler
Formaldehyde	Sorbant tube containing 0.35 g of 150-250 µm (60-100 mesh) silica gel coated with 1.0 mg of acidified 2,4-dinitrophenylhydrazine	Gillian GilAir 3 personal air pump
Toxic organic species ¹ (TOS)	6-Liter Summa canisters	None. Canister shipped with a vacuum inside which was used to collect a sample.

Note: 1 = TOS includes benzene, chloromethane, 1,1-dichloroethene, ethylbenzene, 4-ethyltoluene, dichlorodifluoromethane [also known as (aka) Freon 12], trichlorofluoromethane (aka Freon 11), 1,2,4-trimethylbenzene, toluene, 1,3,5-trimethylbenzene, xylenes, and vinyl chloride.

Onsite electrical outlets were used to power the TSP, PM₁₀, PM_{2.5}, and PCB sampling equipment. Rechargeable batteries were used to power the asbestos and formaldehyde samplers. Power was not needed for the TOS samplers.

Spatial arrangement of samplers in each location (i.e., distance between samplers, height above ground surface) were in accordance with the sampling placement requirements listed in *40 CFR Appendix E to Part 58 - Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring* [United States Environmental Protection Agency (USEPA), 2015] and comments provided by the Bay Area Air Quality Management District (Stevenson, 2016). As such, requirements for sampler spacing were relative to the sampling unit inlet (edge) and conformed to Table T3.3B:

Table T3.3B – Sampler Spacing Requirements			
Parameter	Inlet Above Ground Level Height Requirement (meters)	Horizontal Collocation Requirement (meters)	Vertical Collocation Requirement (meters)
TSP, Metals	2-7	2-4	≤ 3
PM ₁₀ , Metals	2-7	1-4	≤ 3
PM _{2.5} , Metals	2-7	1-4	≤ 3
Asbestos	2-7	1-4	≤ 3
PCBs	2-7	2-4	≤ 3
Formaldehyde	2-7	0-4	≤ 3
TOS	2-7	0-4	≤ 3

Additionally, inlets were greater than 2 meters (m) away from supporting structures (like walls, parapets, or penthouses), greater than 10 m from trees, and between 2 and 10 m from roadways. Inlets also had unrestricted airflow and were located away from obstacles so that the distance from the obstacle to the inlet is at least twice the height that the obstacle protrudes above the inlet.

3.4 Calibration and Leak Check Testing

The TSP, PM₁₀, PM_{2.5}, asbestos, PCB, and formaldehyde sampling equipment was calibrated onsite on October 4 and 5, 2016. Calibration and leak check activities were performed once the equipment was set up at a sampling location and prior to its first use. Calibration and leak check procedures were performed in accordance with the calibration schedule in Table 3 of the SAP. A copy of the field log, which contains additional information about the calibration and leak check testing, is in Appendix B.

3.4.1 TSP Calibration

The TSP sampling equipment was calibrated on October 4, 2016. Calibration included attaching a calibrated orifice and water manometer to each sampler, operating each device with the orifice at five positions that varied the flow rate into the sampler, and recording the measurements of the water manometer for each position directly into the *TE-5170V Sampler Calibration Worksheet* (Appendix C). Leak checks were performed by covering the top of the orifice and listening for a high-pitched squeal. The calculated flow rates and total flows for the TSP sampling equipment are in Table T3.4.1:

Table T3.4.1 – TSP Sampler Flow Rates and Total Flows		
Sample Location	Calculated TSP Flow Rate (m ³ /min)	Calculated TSP Total Flow1 (m ³)
SARB1	1.218	1,754.17
SARB2	1.214	1,748.26
SARB3	1.222	1,759.24
SARB4	1.214	1,748.22
SARB5	1.206	1,735.94

Notes: m³/min = cubic meters per minute
m³ = cubic meters

No leaks were identified and observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

3.4.2 PM₁₀ and PM_{2.5} Calibration

The PM₁₀ and PM_{2.5} sampling equipment was calibrated on October 4, 2016. Calibration included measuring temperature and pressure using calibrated temperature and barometric pressure devices, and entering the measurements into the samplers at the appropriate calibration input screen. Flows were calibrated by placing a calibrated flow standard on the intake of the sampler and running the flow calibration program for the sampler. External leak checks were performed by installing a closed flow rate adapter to the sample inlet and running the leak check program on the sampler. Internal leak checks were performed by installing internal leak check disks into the samplers and running the internal leak check program on the sampler. The calibration results for the PM₁₀ and PM_{2.5} sampling equipment were recorded in Geocon's field log (Appendix B) and on the PM₁₀ and PM_{2.5} alarm logs on each unit (Appendices D and E, respectively). The calculated flow rates for the PM₁₀ and PM_{2.5} sampling equipment are provided in Table T3.4.2.

Table T3.4.2 – PM₁₀ and PM_{2.5} Sampler Flow Rates		
Sample Location	Analyte	Calculated Flow Rate (m3/min)
SARB1	PM ₁₀	16.671
	PM _{2.5}	16.671
SARB2	PM ₁₀	16.671
	PM _{2.5}	16.671
SARB3	PM ₁₀	16.671
	PM _{2.5}	16.681
SARB4	PM ₁₀	16.671
	PM _{2.5}	16.681
SARB5	PM ₁₀	16.681
	PM _{2.5}	16.681

No leaks were identified and observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

3.4.3 PCB Calibration

The PCB sampling equipment was calibrated on October 5, 2016. Calibration included attaching a calibrated orifice and water manometer to each sampler, operating each device with the orifice at five positions that varied the flow rate into the sampler, and recording the measurements of the water manometer for each position directly into the *TE-1000 PUF Calibration Worksheet* (Appendix F). The calculated flow rates and total flows for the PCB sampling equipment are in Table T3.4.3.

Table T3.4.3 – PCB Sampler Flow Rates and Total Flows		
Sample Location	Calculated PCB Flow Rate (m ³ /min)	Calculated PCB Total Flow ¹ (m ³)
SARB1	0.277857	400.1146883
SARB2	0.262541	378.0585179
SARB3	0.265824	382.7869818
SARB4	0.264279	380.5614013
SARB5	0.283426	408.1340702

The observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

3.4.4 Formaldehyde and Asbestos Calibration

The formaldehyde and asbestos sampling equipment were calibrated on October 4, 2016. Information from the calibration was recorded in Geocon's field notes (Appendix B). Calibration included attaching a calibrated rotometer to each sampler, operating each device and adjusting the flow rates the formaldehyde and asbestos samplers to 2.0 and 1.0 liters per minute (lpm), respectively. The observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

3.5 Air Sampling Description

The three 24-hour sampling events were performed between October 5 and 8, 2016. The following sub-sections summarize the three 24-hour sampling events and describe the facility operations during each event.

3.5.1 Test 1

After calibrating and installing the appropriate sample media in each sampling device, Geocon staff began the first 24-hour sampling event by turning on the sampling equipment for SARB2/SARB5 at 1450 on October 5, 2016. Minutes later, Geocon staff turned on sampling equipment at locations at SARB3, SARB1, and SARB4 at 1440, 1450, and 1510, respectively. Geocon staff checked on the status of the sampling equipment at approximate 6-hour intervals. After 24-hours, Geocon staff ended the first sampling event by turning off the sampling equipment at each location, and retrieved and stored the sample media.

Field-based QC parameters performed during Test 1 included collection of collocated samples, also referred to as duplicate samples for air sampling. The collocated samples were collected and analyzed to check for sampling and analysis error, reproducibility, and homogeneity. Collocated samples SARB2 (primary sample) and SARB5 (duplicate sample) were obtained from two identically configured sampler sets operating simultaneously in one location.

SARB staff's activity log (Appendix G) summarizes receiving, processing, shipping and dust control procedures for each day of the week of October 3, 2016. No metals shredding occurred during Test 1 as it was being repaired by SARB staff. For the other facility processes, an average of the hours listed for October 5 and 6, 2016 was assumed because the sampling took place across both days. The MRP operated approximately 7.2 hours while shearing, torch cutting, and welding/fabrication occurred for approximately 9, 8, and 2 hours each, respectively. An average of 236 trucks unloaded material on the Site and 16 trucks and containers were loaded and hauled offsite. One open-topped rail car was loaded but no rail cars were moved nor train engines operated during T1. Dust controls performed at the Site during Test 1 included 10 hours of watering the ground surface and 1.8 hours of sweeping.

3.5.2 Test 2

At the completion of Test 1, Geocon staff replaced the sample media in each of the pumps, then began the next test as soon as practicable. The process of finishing one test and beginning the next test took approximately 2 hours. The second 24-hour sampling event began by turning on the sampling equipment for SARB2/SARB5, SARB3, SARB1, and SARB4 at 1720, 1730, 1740 and 1750, respectively. Geocon staff checked on the status of the sampling equipment at approximate 6-hour intervals. After 24 hours, Geocon staff ended the first sampling event by turning off the sampling equipment at each location, and retrieving and storing the sample media.

Field-based QC parameters performed during Test 2 included collection of collocated samples and field blanks. Collocated samples SARB2 (primary sample) and SARB5 (duplicate sample) were obtained from two identically configured sampler sets operating simultaneously in one location. Field blanks were collected and analyzed to assess the possible contamination of samples before, during, and after sample collection. Each field blank consisted of a clean filter that was placed onto the air sampler and then taken off without running the sampler. Geocon staff collected field blank sample from location SARB4 in between Tests 1 and 2.

Approximately 5.3 hours of metals shredding occurred between approximately midnight and 8:00 AM during Test 2. For the other facility processes, an average of the hours listed for October 6 and 7, 2016 was assumed because the sampling took place across both days. The MRP operated approximately 3.1 hours while shearing, torch cutting, and welding/fabrication occurred for approximately 9, 8, and 3.5 hours each, respectively. An average of 230 trucks unloaded material on the Site and 14 trucks and containers were loaded and hauled offsite. One open-topped rail car was loaded but no rail cars were moved nor train engines operated during T2. Dust controls performed at the Site during Test 2 included 12.5 hours of watering the ground surface and 2 hours of sweeping.

3.5.3 Test 3

At the completion of Test 2, Geocon staff replaced the sample media in each of the pumps, then began the next test as soon as practicable. The process of finishing one test and beginning the next test took approximately 2 hours. The third 24-hour sampling event began by turning on the sampling equipment for SARB2/SARB5, SARB3, SARB1, and SARB4 at 1930, 1940, 1950 and 1955, respectively. Geocon staff checked on the status of the sampling equipment at approximate 6-hour intervals. After 24 hours, Geocon staff ended the first sampling event by turning off the sampling equipment at each location, and retrieved and stored the sample media.

Field-based QC parameters performed during Test 3 included collection of field blanks and filter blanks. Geocon staff collected field blank sample from location SARB2 in between Tests 2 and 3. Filter blanks (sometimes referred to as trip blanks for air sampling) were collected and analyzed to assess the contamination of samples from the native presence of target analytes in the filters used for air sample collection. Each filter blank consisted of a clean filter that was transported with the associated primary samples, but was not taken out of its protective sleeve. One filter blank was collected during after Test 3.

Approximately 6.1 hours of metals shredding occurred between approximately midnight and 8:00 AM during Test 3. For the other facility processes, an average of the hours listed for October 7 and 8, 2016 was assumed because the sampling took place across both days. The MRP did not operate during Test 3, while shearing, torch cutting, and welding/fabrication occurred for approximately 9, 8, and 5 hours each, respectively. An average of 185 trucks unloaded material on the Site and 8 trucks and containers were loaded and hauled offsite. No rail cars were loaded or moved and no train engines operated during T3. Dust controls performed at the Site during Test 3 included 15 hours of watering the ground surface and 2 hours of sweeping.

3.6 Meteorological Conditions

A Davis Vantage Pro2 weather monitoring station recorded site-specific data for wind direction, speed, temperature, relative humidity, and pressure during the three tests. Weatherlink® software and a data logger allowed monitoring and downloading of the site-specific data. The location of the weather station during the test is shown in the Site Plan, Figure 2. The meteorological data is in Appendix G.

3.7 Packaging and Shipping

Geocon staff shipped the asbestos and TOS samples via 2-day shipping under standard COC to EMSL on October 9, 2016. Geocon staff shipped the TSP, PM₁₀, and PM_{2.5} samples via overnight delivery under standard chain-of-custody (COC) to CLN on October 10, 2016. A courier from ECS picked up the PCB and formaldehyde samples from Geocon staff at SARTI under standard COC and transported

the samples to their lab in Garden Grove, California on October 11, 2016. ECS then transported the formaldehyde samples to EAT, which received them on October 12, 2016.

The following summarizes the sample packaging procedures:

- Sample and QA/QC containers were placed into re-sealable plastic storage bags that were put into the sample coolers. Blue ice bags were packed on top and around the samples to maintain an appropriate temperature in the cooler.
- Empty space in sample coolers was filled with bubble wrap to prevent sample container shifting during transportation to the laboratory.
- The appropriate COC(s) associated with the sample cooler were double-bagged in re-sealable plastic bags and placed inside the cooler.

3.8 Laboratory Analysis

CLN analyzed the samples for the following:

- TSP - 40 CFR Part 50, Appendix B to Part 50 *Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere* (USEPA, 1998);
- PM₁₀ - 40 CFR Part 50, Appendix J to Part 50 *Reference Method for the Determination of Particulate Matter as PM₁₀ in the Atmosphere* (USEPA, 1998), 40 CFR Part 50, Appendix L to Part 50 *Reference Method for the Determination of Particulate Matter as PM_{2.5} in the Atmosphere* (USEPA, 1998) and *Quality Assurance Guidance Document 2.12 – Monitoring PM_{2.5} in Ambient Air Using Designated Reference or Class I Equivalent Methods* (USEPA, 2016);
- PM_{2.5} - 40 CFR Part 50, Appendix L to Part 50 *Reference Method for the Determination of Particulate Matter as PM_{2.5} in the Atmosphere* (USEPA, 1998) and *Quality Assurance Guidance Document 2.12 – Monitoring PM_{2.5} in Ambient Air Using Designated Reference or Class I Equivalent Methods* (USEPA, 2016);

EMSL analyzed the samples for the following:

- Asbestos – Asbestos Hazard Emergency Response Act (AHERA)-modified transmission electron microscopy (TEM) as found in 40 CFR part 763 Appendix A Subpart E (USEPA, 1987);
- VOCs - USEPA method TO-15 (USEPA, 1999c).

ECS and EAT respectively analyzed the samples for the following:

- PCBs – USEPA method TO-4A (USEPA, 1999a).
- Formaldehyde – USEPA method TO-11A (USEPA, 1999b).

3.9 Variance from SAP

Sample SARB3-T3-TOS was observed sampling at a rate that was faster than anticipated. After a sampling duration of 15.5 hours, the 6-Liter Summa canister only had approximately 1 inch of mercury vacuum remaining. Therefore, sample SARB3-T3-TOS was stopped and a replacement 6-liter summa canister identified as SARB3-T3-TOSB was used to collect an air sample for the remaining 8.5 hours of test T3. EMSL analyzed both SARB3-T3-TOS and SARB3-T3-TOSB by TO-15. The sum of the analytical results for both samples is representative of the intended 24-hour sampling duration and therefore this variance from the workplan should have no effect on the usefulness of this Report.

Sample SARB4-T3-Asbestos was received by EMSL with a damaged filter and was not analyzed.

Data from SARB's onsite weather station was used to represent the meteorological conditions at the Site instead of Geocon's weather station.

4.0 RESULTS

This section presents the analytical results for the monitoring event and an evaluation of the quality of the data reported by the laboratory.

4.1 Analytical Results

The results of the gravimetric and metals analyses for the TSP, PM₁₀, and PM_{2.5} samples are shown in Tables 1 through 3, respectively. The results of the analyses for asbestos, PCBs, formaldehyde, and TOS samples are shown in Tables 4 through 7, respectively. Copies of the analytical reports are in Appendix H.

Following are a few important points to note with respect to the analytical results:

4.1.1 TSP

- The greatest TSP concentrations were detected in samples from SARB2, followed by SARB4, SARB3, and SARB1.
- The greatest TSP concentrations were detected in T1, followed by T2, and T3.
- The five TSP metals with the greatest concentration were iron at 10.18 µg/m³, calcium at 9.181 µg/m³, potassium at 3.868 µg/m³, aluminum at 3.727 µg/m³, and sulfur at 0.7364 µg/m³.

4.1.2 PM10

- The greatest PM₁₀ concentrations were detected in samples from SARB2, followed by SARB1, SARB3, and SARB4.
- The greatest PM₁₀ concentrations were detected in T3, followed by T2, and T1.
- The five PM₁₀ metals with the greatest concentration were silicon at 11.33 µg/m³, iron at 6.078 µg/m³, aluminum at 4.423 µg/m³, calcium at 4.359 µg/m³, and potassium at 1.979 µg/m³.

4.1.3 PM2.5

- The greatest PM_{2.5} concentrations were detected in samples from SARB4, followed by SARB2, SARB1, and SARB3.
- The greatest PM_{2.5} concentrations were detected in T1, followed by T3, and T2.
- The five PM_{2.5} metals with the greatest concentration were silicon at 9.765 µg/m³, iron at 4.432 µg/m³, aluminum at 3.864 µg/m³, calcium at 3.511 µg/m³, and potassium at 1.609 µg/m³.

4.1.4 Asbestos

- EMSL's lab notes state that each of the asbestos samples, except for the trip blank, had a particulate loading of greater than 10%.
- Chrysotile was observed in sample SARB2-T3-Asbestos at a concentration of 19 structures per millimeter squared. Asbestos were not detected at concentrations greater than or equal to their reporting limit for any of the samples analyzed.

4.1.5 PCBs

- PCBs were not detected at concentrations greater than or equal to their reporting limit for any of the samples analyzed.

4.1.6 Formaldehyde

- Formaldehyde was detected in each of samples analyzed at masses from 1.6 to 2.2 µg.

4.1.7 VOCs

- BTEX, Chloromethane, 4-ethyltoluene, Freon 12, Freon 11, and 1,3,5-trimethylbenzene were detected in at least one TOS sample. 1,1-dichloroethene, 1,2,4-trichlorobenzene, and vinyl chloride were not detected at concentrations equal to or greater than their reporting limits in any of the samples analyzed.

4.2 Data Quality Analysis

The analytical data was reviewed as described in Section 10 of the SAP. Appendix I includes the complete data quality assessment for this air monitoring event. In summary, the laboratory reported that the samples were received in good condition and that the QC samples analyzed met the minimum requirements for acceptability. Analysis of the field duplicate samples identified multiple analytes, mostly metals, that had relative percent differences exceeding 20%. However, this variability of 17 of the metals can be at least moderately attributed to the variability inherent in the filter sample media.

4.3 Meteorological Data

The meteorological data is presented in Appendix G. Wind rose diagrams showing the wind directions and speeds measured during the three 24-hour sampling durations are presented in Appendix J. Additional meteorological information collected during each of the three 24-hour duration tests is presented in table T4.3.

Table T4.3 – Meteorological Data Per Test									
Test	Start Time/Date	End Time/Date	High Temp (°F)	Low Temp (°F)	Avg. Temp (°F)	Avg. Wind Speed (mph)	Dominant Wind Direction	Rainfall (inches)	Avg. Pressure (in-Hg)
1	1430 on 10/5/16	1510 on 10/6/16	76.8	54.1	64.7	1.22	WNW	0	30.01
2	1720 on 10/6/16	1750 on 10/7/16	83.6	53.2	68.1	0.82	WNW	0	29.98
3	1930 on 10/7/16	1955 on 10/8/16	91.5	54.9	71.5	0.88	WNW	0	29.91
Total	1430 on 10/5/16	1955 on 10/8/16	91.5	53.2	68.08	0.97	WNW	0	29.96

Notes: °F = Degrees Fahrenheit
 mph = Miles per hour
 in-Hg = inches of mercury pressure

Here are a few important points to note with respect to the metrological measurements:

- Most of the time, there was no wind observed during each sampling event. A wind speed of 0 mph was recorded for 98 of the 149 observations recorded during tests T1, T2, and T3.
- A wind speed of 0 mph occurred between 8PM and 2 PM during test T1, 7:30 PM and 1:00 PM during Test T2, and 7:30 PM and 7:30 AM during test T3. This indicates that when the metal shredder was operating between approximately midnight and 8:00 AM, there was no or minimal wind.
- The measured wind speeds and directions were generally in accordance with those anticipated prior to the start of the work. For each test, samples SARB1 and SARB3 are representative of upwind conditions, sample SARB4 is representative of conditions downwind from the MRP, and samples SARB2 and SARB5 are representative of conditions downwind of the metal shredder.

5.0 REPORT LIMITATIONS

This report was prepared for the DTSC. Geocon-authorized users of this report are limited to the DTSC. Individuals or organizations deemed appropriate by the DTSC (including, but not necessarily limited to other regulatory agencies, prospective real estate brokers and buyers of all or parts of the Site and their counsel, and/or prospective lending institutions) may utilize the Report for informational purposes only.

Users of this report should understand that this monitoring event was not a comprehensive characterization of the Site. Air monitoring was limited to assessing the concentrations of the specified contaminants of potential concern (COPC) for this project with respect to the specific areas of potential concern identified in this report.

Geocon does not guarantee or warranty, either express or implied, that there is no environmental, health, or financial risk associated with the specific areas identified in this report, other areas of the Site, or the Site as a whole. Users of this report must evaluate the risk of reliance upon the information herein and assume that risk (if any). Geocon is not responsible for unfavorable results due to reliance on information provided in this report.

Information herein with respect to the condition of the specific areas associated with this project is valid only as of the dates of our field activities. Changes in site conditions not brought to our attention between or subsequent to those dates (if any) could result in the need for additional characterization investigation and/or mitigation activities.

Information in this report is based on our site observations, analytical results and associated QC data reported for the air samples. Geocon does not certify or guarantee that the information obtained and reported by others is accurate or suitable for the intended purpose.

The authors of this report declare that, to the best of their knowledge, the information provided herein is truthful and accurate, notwithstanding unknown incidental errors or omissions that would not materially impact or change results of this project or our conclusions. Geocon strived to conduct activities for this project in accordance with the standard level of care in the local geographic area at the time the activities were rendered.

6.0 REFERENCES

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LEGEND:

- Approximate Site Boundary
- SARB1 Proposed Air Sampling Location

0 250
Scale in Feet

SA Recycling – Bakersfield

2000 E. Brundage Lane
Bakersfield, California

SITE PLAN

S9850-03-21

December 2016

Figure 2



Photo No. 1 Sampling location SARB1. Equipment shown from right to left: TE-Wilbur10, TE-Wilbur2.5 (foreground), TE-5170V (background), 6-Liter Summa canister, TE-1000 PUF. GilAir pumps are located behind this set-up.



Photo No. 2 Sampling location SARB2 along with duplicate sample SARB5.

PHOTOS NO. 1 & 2



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GEOCON Project No. S9850-03-21

December 2016



Photo No. 3 GilAir pumps at SARB2/SARB5 with tubing suspended on string to position intake above 2 meters.



Photo No. 4 Sampling location SARB3.

PHOTOS NO. 3 & 4



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Photo No. 5 Sampling location SARB4.

PHOTO NO. 5



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GEOCON Project No. S9850-03-21

December 2016

TABLE I
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Tare (g)	Gross (g)	Net (µg)	Volume (m ³)	Concentration (µg/m ³)	Aluminum (Al) (µg/m ³)	Phosphorus (P) (µg/m ³)	Sulfur (S) (µg/m ³)	Chlorine (Cl) (µg/m ³)	Potassium (K) (µg/m ³)	Calcium (Ca) (µg/m ³)
SARB1-T1-TSP	10/6/2016	4.2945	4.6609	366,400	1,750	209	2.5330	0.0000	0.5387	0.2357	2.3340	6.3940
SARB1-T2-TSP	10/7/2016	4.2919	4.5723	280,400	1,750	160	2.3390	0.0000	0.5429	0.1624	2.2900	6.0810
SARB1-T3-TSP	10/8/2016	4.2823	4.5752	292,900	1,750	167	2.8540	0.0000	0.6058	0.1624	2.7210	6.3960
SARB2-T1-TSP	10/6/2016	4.2456	4.7721	526,500	1,730	304	3.7270	0.0000	0.6510	0.4661	3.8680	9.1810
SARB2-T2-TSP	10/7/2016	4.3010	4.7106	409,600	1,730	237	3.1540	0.0000	0.5639	0.2598	3.1000	8.0800
SARB2-T3-TSP	10/8/2016	4.2881	4.6506	362,500	1,730	210	3.0580	0.0000	0.6102	0.2542	3.1050	6.9510
SARB3-T1-TSP	10/6/2016	4.3092	4.6897	380,500	1,741	219	2.8870	0.0000	0.6103	0.3789	2.8150	6.9140
SARB3-T2-TSP	10/7/2016	4.2891	4.6256	336,500	1,741	193	2.4600	0.0000	0.5130	0.3213	2.2270	6.2520
SARB3-T3-TSP	10/8/2016	4.2797	4.6352	355,500	1,741	204	2.8960	0.0000	0.7364	0.2111	2.8190	8.1640
SARB4-T1-TSP	10/6/2016	4.2715	4.6572	385,700	1,730	223	2.6940	0.0000	0.5855	0.2603	2.5320	6.4260
SARB4-T2-TSP	10/7/2016	4.3080	4.7480	440,000	1,730	254	3.1870	0.0000	0.5630	0.1824	2.8910	8.2000
SARB4-T3-TSP	10/8/2016	4.2652	4.6197	354,500	1,730	205	2.9010	0.0000	0.5776	0.1711	2.8230	7.0660
<i>Field Duplicate</i>												
SARB5-T1-TSP	10/6/2016	4.3042	4.9540	649,800	1,717	378	4.0220	0.0000	0.6283	0.4630	4.1850	10.1400
RPD						0.22	0.08	#DIV/0!	0.04	0.01	0.08	0.10
SARB5-T2-TSP	10/7/2016	4.3027	4.8316	528,900	1,717	308	3.9490	0.0000	0.6247	0.3020	3.8050	10.0400
RPD						0.26	0.22	#DIV/0!	0.10	0.15	0.20	0.22
<i>Field Blank</i>												
SARB4-T1-TSP-FB ¹	10/6/2016	4.2675	4.2672	-300	---	---	394.1000	0.0000	39.3800	7.6330	321.0000	2109.000
SARB2-T3-TSP-FB ¹	10/8/2016	4.3135	4.3131	-400	---	---	193.3000	0.0000	44.5800	22.0100	327.3000	2125.000
<i>Trip Blank</i>												
SARB-TB-TSP ¹	10/8/2016	4.2823	4.2816	-700	---	---	343.8000	0.0000	34.6300	12.1000	323.9000	2139.000
<i>Lab Blank</i>												
Lab Blank ¹		4.2274	4.2274	0	---	---	345.6000	0.0000	24.8500	8.9730	308.0000	2112.000
Lab Blank ¹		4.2934	4.2938	400	---	---	304.9000	0.0000	38.9800	0.0000	299.3000	2101.000

TABLE I
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Titanium (Ti) (µg/m ³)	Vanadium (V) (µg/m ³)	Chromium (Cr) (µg/m ³)	Manganese (Mn) (µg/m ³)	Iron (Fe) (µg/m ³)	Cobalt (Co) (µg/m ³)	Nickel (Ni) (µg/m ³)	Copper (Cu) (µg/m ³)	Zinc (Zn) (µg/m ³)	Gallium (Ga) (µg/m ³)	Germanium (Ge) (µg/m ³)
SARB1-T1-TSP	10/6/2016	0.3552	0.0000	0.0432	0.1133	5.8970	0.0000	0.0114	0.3582	0.2645	0.0016	0.0027
SARB1-T2-TSP	10/7/2016	0.3983	0.0009	0.0377	0.1644	5.9460	0.0000	0.0074	0.1937	0.2133	0.0028	0.0029
SARB1-T3-TSP	10/8/2016	0.4278	0.0000	0.0386	0.1434	7.1290	0.0000	0.0065	0.2464	0.2177	0.0021	0.0023
SARB2-T1-TSP	10/6/2016	0.6172	0.0027	0.0447	0.1844	10.1800	0.0000	0.0117	0.1561	0.3267	0.0076	0.0035
SARB2-T2-TSP	10/7/2016	0.5175	0.0000	0.0415	0.1603	8.6760	0.0000	0.0091	0.2191	0.2945	0.0047	0.0028
SARB2-T3-TSP	10/8/2016	0.4825	0.0000	0.0389	0.1816	9.3830	0.0000	0.0087	0.2823	0.1958	0.0029	0.0019
SARB3-T1-TSP	10/6/2016	0.4424	0.0004	0.0427	0.1394	7.3670	0.0000	0.0305	0.1948	0.2731	0.0044	0.0027
SARB3-T2-TSP	10/7/2016	0.3717	0.0000	0.0445	0.1239	6.2030	0.0000	0.0112	0.2101	0.3349	0.0037	0.0038
SARB3-T3-TSP	10/8/2016	0.503	0.0000	0.0458	0.1806	8.7260	0.0000	0.0118	0.2528	0.4515	0.0041	0.0028
SARB4-T1-TSP	10/6/2016	0.3898	0.0011	0.0434	0.1236	6.8550	0.0000	0.0257	0.3640	0.2704	0.0015	0.0028
SARB4-T2-TSP	10/7/2016	0.4992	0.0000	0.0501	0.1848	8.3240	0.0000	0.0120	0.5574	0.3638	0.0000	0.0014
SARB4-T3-TSP	10/8/2016	0.4823	0.0013	0.0463	0.2178	9.3800	0.0000	0.0119	0.3708	0.2661	0.0013	0.002
<i>Field Duplicate</i>												
SARB5-T1-TSP	10/6/2016	0.6772	0.0012	0.0454	0.2084	11.4200	0.0000	0.0112	0.2899	0.3944	0.0055	0.004
RPD		0.09	0.77	0.02	0.12	0.11	#DIV/0!	0.04	0.60	0.19	0.32	0.13
SARB5-T2-TSP	10/7/2016	0.6474	0.0006	0.0470	0.1954	11.1600	0.0000	0.0114	0.2859	0.4100	0.0035	0.0038
RPD		0.22	2.00	0.12	0.20	0.25	#DIV/0!	0.22	0.26	0.33	0.29	0.30
<i>Field Blank</i>												
SARB4-T1-TSP-FB ¹	10/6/2016	0	0.0000	44.7800	7.8760	136.5000	0.0000	5.3190	14.8600	6.5370	16.3200	10.11
SARB2-T3-TSP-FB ¹	10/8/2016	2.436	0.0000	45.7200	6.8210	154.1000	0.0000	6.8210	15.6700	8.7700	13.8400	8.404
<i>Trip Blank</i>												
SARB-TB-TSP ¹	10/8/2016	28.99	0.0000	46.2400	9.0540	136.7000	0.0000	7.2670	13.2400	5.3190	11.3300	3.898
<i>Lab Blank</i>												
Lab Blank ¹		24.97	0.0000	43.4800	7.6730	132.6000	0.0000	7.7140	12.9900	7.1460	12.6300	6.252
Lab Blank ¹		24.56	0.0000	45.9200	8.5260	133.8000	0.0000	8.4850	14.0100	5.7650	9.9880	6.496

TABLE I
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Arsenic (As) (µg/m ³)	Selenium (Se) (µg/m ³)	Bromine (Br) (µg/m ³)	Rubidium (Rb) (µg/m ³)	Strontium (Sr) (µg/m ³)	Yttrium (Y) (µg/m ³)	Zirconium (Zr) (µg/m ³)	Molybdenum (Mo) (µg/m ³)	Palladium (Pd) (µg/m ³)	Silver (Ag) (µg/m ³)	Cadmium (Cd) (µg/m ³)
SARB1-T1-TSP	10/6/2016	0.0048	0.0000	0.0058	0.0119	0.0447	0.0056	0.0317	0.0450	0.0000	0.0014	0.0020
SARB1-T2-TSP	10/7/2016	0.0077	0.0016	0.0098	0.0104	0.0442	0.0082	0.0320	0.0383	0.0000	0.0015	0.0006
SARB1-T3-TSP	10/8/2016	0.0038	0.0009	0.0142	0.0152	0.0516	0.0080	0.0403	0.0432	0.0000	0.0001	0.0012
SARB2-T1-TSP	10/6/2016	0.0068	0.0019	0.0091	0.0234	0.0872	0.0087	0.0460	0.0353	0.0000	0.0004	0.0004
SARB2-T2-TSP	10/7/2016	0.0068	0.0001	0.0110	0.0151	0.0643	0.0072	0.0358	0.0326	0.0000	0.0001	0.0013
SARB2-T3-TSP	10/8/2016	0.0077	0.0000	0.0126	0.0145	0.0567	0.0053	0.0453	0.0323	0.0003	0.0011	0.0000
SARB3-T1-TSP	10/6/2016	0.0049	0.0005	0.0085	0.0141	0.0550	0.0087	0.0375	0.0442	0.0000	0.0014	0.0030
SARB3-T2-TSP	10/7/2016	0.0031	0.0002	0.0161	0.0108	0.0436	0.0036	0.0356	0.0426	0.0000	0.0002	0.0004
SARB3-T3-TSP	10/8/2016	0.0087	0.0012	0.0144	0.0140	0.0590	0.0039	0.0402	0.0361	0.0007	0	0.0000
SARB4-T1-TSP	10/6/2016	0.0041	0.0002	0.0082	0.0124	0.0526	0.0028	0.0320	0.0431	0.0013	0.0005	0.0000
SARB4-T2-TSP	10/7/2016	0.0054	0.0019	0.0136	0.0128	0.0556	0.0034	0.0368	0.0415	0.0000	0.003	0.0013
SARB4-T3-TSP	10/8/2016	0.0076	0.0010	0.0137	0.0142	0.0594	0.0057	0.0411	0.0389	0.0000	0.0005	0.0005
<i>Field Duplicate</i>												
SARB5-T1-TSP	10/6/2016	0.0085	0.0008	0.0104	0.0229	0.0894	0.0116	0.0441	0.0412	0.0014	0	0.0000
RPD		0.22	0.81	0.13	0.02	0.02	0.29	0.04	0.15	2.00	2.00	2.00
SARB5-T2-TSP	10/7/2016	0.0055	0.0004	0.0128	0.0220	0.0856	0.0065	0.0464	0.0423	0.0006	0.0008	0.0009
RPD		0.21	1.20	0.15	0.37	0.28	0.10	0.26	0.26	2.00	1.56	0.36
<i>Field Blank</i>												
SARB4-T1-TSP-FB ¹	10/6/2016	2.3950	1.3800	0.0000	0.0000	6.8210	2.4360	36.4600	58.4200	1.4620	0.406	2.0710
SARB2-T3-TSP-FB ¹	10/8/2016	0.7308	0.4466	0.7308	1.4620	7.2670	4.5070	35.0800	64.3900	1.0560	1.177	0.0000
<i>Trip Blank</i>												
SARB-TB-TSP ¹	10/8/2016	0.0000	0.8526	2.1520	2.0710	3.8160	4.4250	37.1100	57.6500	0.0000	3.167	0.0000
<i>Lab Blank</i>												
Lab Blank ¹		2.7200	0.2842	1.2990	2.6800	6.9020	7.7140	34.8800	56.2700	0.0000	0.4466	0.9744
Lab Blank ¹		1.9490	2.1110	0.6496	0.0406	4.7500	2.6390	31.0600	55.7400	0.3654	0.8526	0.0000

TABLE 1
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Indium (In) (µg/m ³)	Tin (Sn) (µg/m ³)	Antimony (Sb) (µg/m ³)	Barium (Ba) (µg/m ³)	Lanthanum (La) (µg/m ³)	Mercury (Hg) (µg/m ³)	Lead (Pb) (µg/m ³)	Beryllium (Be) (µg/m ³)
SARB1-T1-TSP	10/6/2016	0.0003	0.0150	0.0114	0.1609	0.0115	0.0000	0.0541	0.0004
SARB1-T2-TSP	10/7/2016	0.0000	0.0135	0.0013	0.1832	0.0000	0.0015	0.0262	0.0002
SARB1-T3-TSP	10/8/2016	0.0020	0.0144	0.0051	0.2106	0.0000	0.0012	0.0287	0.0002
SARB2-T1-TSP	10/6/2016	0.0024	0.0154	0.0034	0.2870	0.0079	0.0019	0.0374	0.0004
SARB2-T2-TSP	10/7/2016	0.0000	0.0135	0.0039	0.2459	0.0023	0.0015	0.0360	0.0004
SARB2-T3-TSP	10/8/2016	0.0027	0.0167	0.0101	0.2560	0.0093	0.0010	0.0191	0.0003
SARB3-T1-TSP	10/6/2016	0.0000	0.0131	0.0076	0.1780	0.0000	0.0014	0.0377	0.0004
SARB3-T2-TSP	10/7/2016	0.0000	0.0181	0.0360	0.1728	0.0106	0.0000	0.0608	0.0003
SARB3-T3-TSP	10/8/2016	0.0000	0.0165	0.0165	0.2367	0.0021	0.0000	0.0484	0.0003
SARB4-T1-TSP	10/6/2016	0.0001	0.0174	0.0130	0.1716	0.0081	0.0000	0.0608	0.0004
SARB4-T2-TSP	10/7/2016	0.0000	0.0247	0.0131	0.2169	0.0090	0.0007	0.0765	0.0003
SARB4-T3-TSP	10/8/2016	0.0000	0.0184	0.0122	0.2137	0.0075	0.0011	0.0452	0.0003
<i>Field Duplicates</i>									
SARB5-T1-TSP	10/6/2016	0.0013	0.0146	0.0122	0.3041	0.0045	0.0021	0.0467	0.0006
RPD		0.59	0.05	1.13	0.06	0.55	0.10	0.22	0.39
SARB5-T2-TSP	10/7/2016	0.0000	0.0174	0.0088	0.2864	0.0112	0.0020	0.0577	0.0005
RPD		#DIV/0!	0.25	0.77	0.15	1.32	0.29	0.46	0.21
<i>Field Blank</i>									
SARB4-T1-TSP-FB ¹	10/6/2016	0.0000	5.8060	0.0000	77.1400	16.2800	0.0000	3.6540	<0.049
SARB2-T3-TSP-FB ¹	10/8/2016	0.0000	9.5820	0.0000	73.9300	11.0800	0.0000	1.5020	<0.049
<i>Trip Blank</i>									
SARB-TB-TSP ¹	10/8/2016	0.0000	15.5500	0.0000	24.3200	4.7910	0.0000	2.9230	<0.049
<i>Lab Blank</i>									
Lab Blank ¹		0.0000	15.2200	0.0000	22.9400	3.9380	0.0000	0.0000	<0.049
Lab Blank ¹		0.0000	19.2000	0.0000	36.9500	0.0000	0.0000	1.5430	<0.049

Notes: g = grams µg/m³ = micrograms per cubic meter Highlighted = concentrations are less than three times the uncertainty
 m³ = cubic meters --- = not sampled/tested Italics = Quality assurance/quality control samples
 µg = micrograms ¹ = units for these QA/QC samples are µg/filter < = Less than the laboratory reporting limit

TABLE 2
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Tare (mg)	Gross (mg)	Net (µg)	Volume (m ³)	Concentration (µg/m ³)	Sodium (Na) (µg/m ³)	Magnesium (Mg) (µg/m ³)	Aluminum (Al) (µg/m ³)	Silicon (Si) (µg/m ³)	Phosphorus (P) (µg/m ³)	Sulfur (S) (µg/m ³)
SARB1-T1-PM10	10/6/2016	387.836	390.386	2550	24	106	0.7825	1.3150	4.2290	10.5300	0.1116	0.7119
SARB1-T2-PM10	10/7/2016	381.396	383.595	2199	24	91.6	0.7858	1.1460	3.6520	9.4870	0.1070	0.7030
SARB1-T3-PM10	10/8/2016	376.454	378.880	2426	24	101	0.7251	1.1480	3.5780	9.0640	0.1030	0.7284
SARB2-T1-PM10	10/6/2016	390.039	392.571	2532	24	106	0.9520	1.4920	4.3760	11.2800	0.1118	0.6912
SARB2-T2-PM10	10/7/2016	385.093	387.548	2455	24	102	0.7943	1.2830	3.9850	10.1300	0.0997	0.6686
SARB2-T3-PM10	10/8/2016	370.099	372.830	2731	24	114	0.8508	1.4750	4.4230	11.3300	0.1146	0.7999
SARB3-T1-PM10	10/6/2016	380.821	382.948	2127	24	88.6	0.7792	1.2310	3.6370	9.3650	0.1119	0.6893
SARB3-T2-PM10	10/7/2016	368.083	370.361	2278	24	94.9	0.8338	1.2700	3.7410	9.5630	0.1065	0.7369
SARB3-T3-PM10	10/8/2016	373.243	375.991	2748	24	115	0.7656	1.3530	4.1880	10.6400	0.1133	0.8442
SARB4-T1-PM10	10/6/2016	380.688	381.000	312	24	13.0	0.1923	0.1209	0.2956	0.7006	0.0156	0.2662
SARB4-T2-PM10	10/7/2016	373.829	376.232	2403	24	100	0.7213	1.1070	3.6330	9.0490	0.0910	0.6380
SARB4-T3-PM10	10/8/2016	365.838	368.378	2540	24	106	0.7208	1.3280	4.2810	10.8100	0.1082	0.7552
<i>Field Duplicate</i>												
SARB5-T1-PM10	10/6/2016	380.362	383.170	2808	24	117	0.8936	1.5890	4.6960	12.1000	0.1077	0.6874
SARB5-T2-PM10	10/7/2016	346.197	348.681	2484	24	104	0.7609	1.2730	3.9850	10.3700	0.1046	0.6686
<i>Field Blank</i>												
SARB4-T1-PM10-FB 1	10/6/2016	385.466	385.482	16	---	---	0.5288	0.0000	0.0000	0.0000	0.0000	0.0000
SARB2-T3-PM10-FB 1	10/8/2016	380.177	380.195	18	---	---	0.0000	0.0000	0.0000	0.0045	0.0000	0.0102
<i>Trip Blank</i>												
SARB-TB-PM10 1	10/8/2016	385.841	385.848	7	---	---	0.0000	0.0000	0.0000	0.0136	0.0000	0.0000
<i>Lab Blank</i>												
Lab Blank ¹		384.164	384.167	3	---	---	0.1537	0.0599	0.0667	0.0000	0.0000	0.0000
Lab Blank ¹		377.016	377.015	-1	---	---	0.0000	0.0000	0.0000	0.0056	0.0000	0.0090
Lab Blank ¹		351.498	351.500	2	---	---	0.0000	0.0000	0.0000	0.0034	0.0000	0.0000
Lab Blank ¹		376.891	376.893	2	---	---	0.1514	0.0000	0.0000	0.0147	0.0000	0.0000

TABLE 2
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Chlorine (Cl) (µg/m ³)	Potassium (K) (µg/m ³)	Calcium (Ca) (µg/m ³)	Titanium (Ti) (µg/m ³)	Vanadium (V) (µg/m ³)	Chromium (Cr) (µg/m ³)	Manganese (Mn) (µg/m ³)	Iron (Fe) (µg/m ³)	Cobalt (Co) (µg/m ³)	Nickel (Ni) (µg/m ³)	Copper (Cu) (µg/m ³)
SARB1-T1-PM10	10/6/2016	0.3778	1.7200	4.1450	0.3445	0.0144	0.0117	0.0756	4.4050	0.0000	0.0086	0.2350
SARB1-T2-PM10	10/7/2016	0.2380	1.6020	3.4160	0.3474	0.0158	0.0099	0.1250	4.0610	0.0000	0.0045	0.1256
SARB1-T3-PM10	10/8/2016	0.2385	1.5160	3.1000	0.3144	0.0115	0.0073	0.0807	3.9130	0.0000	0.0038	0.1643
SARB2-T1-PM10	10/6/2016	0.4084	1.8640	4.0240	0.3731	0.0140	0.0091	0.0797	4.4740	0.0000	0.0043	0.0924
SARB2-T2-PM10	10/7/2016	0.2399	1.6000	3.6780	0.3413	0.0101	0.0107	0.0725	4.2150	0.0000	0.0041	0.0809
SARB2-T3-PM10	10/8/2016	0.3228	1.9790	3.9020	0.3988	0.0185	0.0100	0.1149	6.0270	0.0000	0.0067	0.1673
SARB3-T1-PM10	10/6/2016	0.3934	1.5690	3.3980	0.2994	0.0131	0.0091	0.0681	4.0400	0.0000	0.0251	0.0946
SARB3-T2-PM10	10/7/2016	0.5132	1.5610	3.6090	0.3252	0.0127	0.0106	0.0843	4.2980	0.0000	0.0072	0.1104
SARB3-T3-PM10	10/8/2016	0.2860	1.7930	4.3590	0.4132	0.0138	0.0130	0.1146	5.4050	0.0000	0.0067	0.1582
SARB4-T1-PM10	10/6/2016	0.0407	0.1521	0.3074	0.0224	0.0016	0.0024	0.0097	0.5867	0.0000	0.0145	0.0323
SARB4-T2-PM10	10/7/2016	0.2027	1.4250	3.4860	0.3148	0.0130	0.0102	0.0951	3.9190	0.0000	0.0050	0.2088
SARB4-T3-PM10	10/8/2016	0.2404	1.8500	3.7620	0.4087	0.0168	0.0119	0.1486	6.0780	0.0000	0.0087	0.2002
<i>Field Duplicate</i>												
SARB5-T1-PM10	10/6/2016	0.4334	2.0250	4.4240	0.3967	0.0134	0.0121	0.0834	4.9580	0.0000	0.0056	0.1258
SARB5-T2-PM10	10/7/2016	0.2540	1.6730	3.8810	0.3383	0.0162	0.0091	0.0831	4.4170	0.0000	0.0045	0.1130
<i>Field Blank</i>												
SARB4-T1-PM10-FB 1	10/6/2016	0.0000	0.0000	0.0124	0.0000	0.0000	0.0090	0.0000	0.0045	0.0000	0.0000	0.0011
SARB2-T3-PM10-FB 1	10/8/2016	0.0102	0.0237	0.0599	0.0000	0.0203	0.0136	0.0124	0.0000	0.0000	0.0000	0.0011
<i>Trip Blank</i>												
SARB-TB-PM10 1	10/8/2016	0.0034	0.0000	0.0090	0.0000	0.0000	0.0090	0.0136	0.0068	0.0000	0.0000	0.0000
<i>Lab Blank</i>												
Lab Blank 1		0.0023	0.0000	0.0000	0.0000	0.0000	0.0011	0.0011	0.0102	0.0124	0.0000	0.0000
Lab Blank 1		0.0000	0.0000	0.0011	0.0000	0.0000	0.0000	0.0068	0.0000	0.0090	0.0000	0.0011
Lab Blank 1		0.0260	0.0000	0.0000	0.0158	0.0000	0.0136	0.0000	0.0011	0.0000	0.0000	0.0000
Lab Blank 1		0.0249	0.0000	0.0407	0.0000	0.0045	0.0045	0.0045	0.0203	0.0000	0.0034	0.0000

TABLE 2
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

[illegible]

TABLE 2
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Palladium (Pd) (µg/m ³)	Silver (Ag) (µg/m ³)	Cadmium (Cd) (µg/m ³)	Indium (In) (µg/m ³)	Tin (Sn) (µg/m ³)	Antimony (Sb) (µg/m ³)	Barium (Ba) (µg/m ³)	Lanthanum (La) (µg/m ³)	Mercury (Hg) (µg/m ³)	Lead (Pb) (µg/m ³)	Beryllium (Be) (µg/m ³)
SARB1-T1-PM10	10/6/2016	0.0020	0.0000	0.0004	0.0012	0.0016	0.0000	0.0823	0.0000	0.0005	0.0535	<0.00033
SARB1-T2-PM10	10/7/2016	0.0021	0.0008	0.0000	0.0002	0.0000	0.0000	0.1157	0.0000	0.0000	0.0202	<0.00033
SARB1-T3-PM10	10/8/2016	0.0000	0.0032	0.0000	0.0012	0.0000	0.0040	0.0945	0.0000	0.0004	0.0173	<0.00033
SARB2-T1-PM10	10/6/2016	0.0000	0.0016	0.0000	0.0033	0.0067	0.0000	0.1016	0.0000	0.0000	0.0202	<0.00033
SARB2-T2-PM10	10/7/2016	0.0000	0.0001	0.0019	0.0021	0.0010	0.0045	0.0905	0.0000	0.0000	0.0192	<0.00033
SARB2-T3-PM10	10/8/2016	0.0018	0.0059	0.0007	0.0002	0.0109	0.0033	0.1308	0.0000	0.0004	0.0143	<0.00033
SARB3-T1-PM10	10/6/2016	0.0000	0.0002	0.0022	0.0019	0.0029	0.0030	0.0764	0.0000	0.0000	0.0241	<0.00033
SARB3-T2-PM10	10/7/2016	0.0000	0.0000	0.0008	0.0010	0.0039	0.0438	0.1018	0.0000	0.0000	0.0518	<0.00033
SARB3-T3-PM10	10/8/2016	0.0014	0.0016	0.0000	0.0000	0.0000	0.0031	0.1096	0.0000	0.0000	0.0266	<0.00033
SARB4-T1-PM10	10/6/2016	0.0000	0.0000	0.0000	0.0000	0.0020	0.0089	0.0134	0.0011	0.0000	0.0090	<0.00033
SARB4-T2-PM10	10/7/2016	0.0000	0.0001	0.0000	0.0000	0.0170	0.0000	0.0899	0.0000	0.0000	0.0331	<0.00033
SARB4-T3-PM10	10/8/2016	0.0000	0.0020	0.0021	0.0000	0.0031	0.0072	0.1082	0.0000	0.0003	0.0232	<0.00033
<i>Field Duplicate</i>												
SARB5-T1-PM10	10/6/2016	0.0000	0.0014	0.0000	0.0000	0.0053	0.0014	0.1016	0.0000	0.0000	0.0301	<0.00033
SARB5-T2-PM10	10/7/2016	0.0000	0.0000	0.0028	0.0000	0.0048	0.0056	0.1229	0.0000	0.0004	0.0188	<0.00033
<i>Field Blank</i>												
SARB4-T1-PM10-FB 1	10/6/2016	0.0000	0.0542	0.0610	0.0000	0.0000	0.3277	0.0045	0.0000	0.0000	0.0237	<0.008
SARB2-T3-PM10-FB 1	10/8/2016	0.0136	0.0249	0.0463	0.0734	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	<0.008
<i>Trip Blank</i>												
SARB-TB-PM10 1	10/8/2016	0.0000	0.0000	0.0181	0.0000	0.0362	0.0000	0.0000	0.0000	0.0011	0.0000	<0.008
<i>Lab Blank</i>												
Lab Blank ¹		0.0000	0.0079	0.0000	0.0000	0.0000	0.0565	0.0000	0.0000	0.0000	0.0000	<0.008
Lab Blank ¹		0.0090	0.0802	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0056	<0.008
Lab Blank ¹		0.0000	0.0328	0.0508	0.0000	0.0000	0.0226	0.0000	0.0000	0.0000	0.0056	<0.008
Lab Blank ¹		0.0000	0.0452	0.0000	0.0000	0.0497	0.0000	0.0000	0.0000	0.0079	0.0102	<0.008

Notes: g = grams µg/m³ = micrograms per cubic meter Highlighted = concentrations are less than three times the uncertainty
 m³ = cubic meters --- = not sampled/tested *Italics* = Quality assurance/quality control samples
 µg = micrograms ¹ = units for these QA/QC samples are µg/filter < = Less than the laboratory reporting limit

TABLE 3
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Tare (mg)	Gross (mg)	Net (µg)	Volume (m ³)	Concentration (µg/m ³)	Sodium (Na) (µg/m ³)	Magnesium (Mg) (µg/m ³)	Aluminum (Al) (µg/m ³)	Silicon (Si) (µg/m ³)	Phosphorus (P) (µg/m ³)	Sulfur (S) (µg/m ³)
SARB1-T1-PM2.5	10/6/2016	378.745	379.092	347	24	14.5	0.2087	0.1355	0.4092	0.9068	0.0153	0.2719
SARB1-T2-PM2.5	10/7/2016	379.413	379.773	360	24	15.0	0.2173	0.1423	0.3035	0.7778	0.0185	0.3214
SARB1-T3-PM2.5	10/8/2016	385.587	386.061	474	24	19.8	0.1410	0.1611	0.4149	0.9803	0.0220	0.3674
SARB2-T1-PM2.5	10/6/2016	376.706	377.047	341	24	14.2	0.2196	0.1872	0.4374	1.0480	0.0173	0.2691
SARB2-T2-PM2.5	10/7/2016	372.657	373.069	412	24	17.2	0.2318	0.1735	0.4082	0.9633	0.0168	0.3095
SARB2-T3-PM2.5	10/8/2016	372.731	373.317	586	24	24.4	0.2249	0.2530	0.6352	1.5210	0.0261	0.3674
SARB3-T1-PM2.5	10/6/2016	388.979	389.280	301	24	12.5	0.2197	0.1262	0.3057	0.7387	0.0162	0.2604
SARB3-T2-PM2.5	10/7/2016	379.110	379.498	388	24	16.2	0.2221	0.1670	0.3570	0.8367	0.0186	0.3390
SARB3-T3-PM2.5	10/8/2016	372.214	372.678	464	24	19.3	0.2163	0.1680	0.3867	0.9355	0.0196	0.3455
SARB4-T1-PM2.5	10/6/2016	389.038	391.357	2319	24	96.6	0.7110	1.2200	3.8640	9.7650	0.1173	0.7025
SARB4-T2-PM2.5	10/7/2016	374.623	375.048	425	24	17.7	0.2291	0.1552	0.4017	0.9238	0.0189	0.3046
SARB4-T3-PM2.5	10/8/2016	373.827	374.330	503	24	21.0	0.2355	0.1826	0.4492	1.0740	0.0206	0.3770
<i>Field Duplicate</i>												
SARB5-T1-PM2.5	10/6/2016	379.488	379.852	364	24	15.2	0.2584	0.2056	0.4641	1.1220	0.0178	0.2739
SARB5-T2-PM2.5	10/7/2016	369.964	370.368	404	24	16.8	0.1989	0.1755	0.3989	0.9953	0.0182	0.3025
<i>Field Blank</i>												
SARB4-T1-PM2.5-FB	10/6/2016	378.447	378.464	17	---	---	0.0000	0.0000	0.0000	0.0644	0.0000	0.0000
SARB2-T3-PM2.5-FB	10/8/2016	369.194	369.205	11	---	---	0.3232	0.1254	0.0000	0.0362	0.0000	0.0000
<i>Trip Blank</i>												
SARB-TB-PM2.5 ¹	10/8/2016	382.136	382.144	8	---	---	0.5040	0.0000	0.0000	0.0079	0.0000	0.0000
<i>Lab Blank</i>												
Lab Blank ¹		384.164	384.167	3	---	---	0.1537	0.0599	0.0667	0.0000	0.0000	0.0000
Lab Blank ¹		377.016	377.015	-1	---	---	0.0000	0.0000	0.0000	0.0056	0.0000	0.0090
Lab Blank ¹		351.498	351.500	2	---	---	0.0000	0.0000	0.0000	0.0034	0.0000	0.0000
Lab Blank ¹		376.891	376.893	2	---	---	0.1514	0.0000	0.0000	0.0147	0.0000	0.0000

TABLE 3
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Chlorine (Cl) (µg/m ³)	Potassium (K) (µg/m ³)	Calcium (Ca) (µg/m ³)	Titanium (Ti) (µg/m ³)	Vanadium (V) (µg/m ³)	Chromium (Cr) (µg/m ³)	Manganese (Mn) (µg/m ³)	Iron (Fe) (µg/m ³)	Cobalt (Co) (µg/m ³)	Nickel (Ni) (µg/m ³)	Copper (Cu) (µg/m ³)
SARB1-T1-TSP	10/6/2016	0.0577	0.1790	0.4831	0.0291	0.0010	0.0031	0.0099	0.5010	0.0000	0.0032	0.0524
SARB1-T2-TSP	10/7/2016	0.0338	0.1788	0.3123	0.0337	0.0000	0.0011	0.0661	0.5725	0.0000	0.0008	0.0367
SARB1-T3-TSP	10/8/2016	0.0592	0.2246	0.3807	0.0368	0.0016	0.0011	0.0237	0.6804	0.0000	0.0004	0.0614
SARB2-T1-TSP	10/6/2016	0.0503	0.2014	0.4271	0.0367	0.0009	0.0002	0.0100	0.5245	0.0000	0.0007	0.0235
SARB2-T2-TSP	10/7/2016	0.0394	0.1897	0.4024	0.0363	0.0005	0.0019	0.0160	0.5193	0.0000	0.0008	0.0252
SARB2-T3-TSP	10/8/2016	0.0573	0.3190	0.5947	0.0597	0.0031	0.0023	0.0498	1.7310	0.0000	0.0030	0.0741
SARB3-T1-TSP	10/6/2016	0.0468	0.1625	0.3127	0.0238	0.0010	0.0026	0.0105	0.5386	0.0000	0.0150	0.0282
SARB3-T2-TSP	10/7/2016	0.2067	0.1783	0.3551	0.0283	0.0008	0.0013	0.0223	0.6319	0.0000	0.0034	0.0446
SARB3-T3-TSP	10/8/2016	0.0570	0.2117	0.3962	0.0404	0.0011	0.0018	0.0408	0.9054	0.0000	0.0019	0.0554
SARB4-T1-TSP	10/6/2016	0.3472	1.6090	3.5110	0.3261	0.0143	0.0102	0.0741	4.4320	0.0000	0.0223	0.1536
SARB4-T2-TSP	10/7/2016	0.0366	0.1918	0.4034	0.0387	0.0017	0.0007	0.0412	0.5989	0.0000	0.0009	0.0287
SARB4-T3-TSP	10/8/2016	0.0608	0.2556	0.4205	0.0495	0.0026	0.0025	0.0766	1.5730	0.0000	0.0038	0.0766
<i>Field Duplicate</i>												
SARB5-T1-TSP	10/6/2016	0.0583	0.2128	0.4623	0.0385	0.0009	0.0019	0.0103	0.5570	0.0000	0.0008	0.0338
SARB5-T2-TSP	10/7/2016	0.0347	0.1954	0.4212	0.0314	0.0011	0.0005	0.0174	0.5287	0.0000	0.0006	0.0374
<i>Field Blank</i>												
SARB4-T1-TSP-FB ¹	10/6/2016	0.0034	0.0011	0.0418	0.0102	0.0000	0.0147	0.0011	0.0056	0.0000	0.0000	0.0034
SARB2-T3-TSP-FB ¹	10/8/2016	0.0531	0.0000	0.0000	0.0000	0.0023	0.0000	0.0045	0.0023	0.0000	0.0000	0.0000
<i>Trip Blank</i>												
SARB-TB-TSP ¹	10/8/2016	0.0124	0.0000	0.0339	0.0000	0.0000	0.0056	0.0000	0.0034	0.0045	0.0000	0.0000
<i>Lab Blank</i>												
Lab Blank ¹		0.0023	0.0000	0.0000	0.0000	0.0000	0.0011	0.0011	0.0102	0.0124	0.0000	0.0000
Lab Blank ¹		0.0000	0.0000	0.0011	0.0000	0.0000	0.0000	0.0068	0.0000	0.0090	0.0000	0.0011
Lab Blank ¹		0.0260	0.0000	0.0000	0.0158	0.0000	0.0136	0.0000	0.0011	0.0000	0.0000	0.0000
Lab Blank ¹		0.0249	0.0000	0.0407	0.0000	0.0045	0.0045	0.0045	0.0203	0.0000	0.0034	0.0000

TABLE 3
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

[illegible]

TABLE 3
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

Client ID	Sample Date	Palladium (Pd) (µg/m ³)	Silver (Ag) (µg/m ³)	Cadmium (Cd) (µg/m ³)	Indium (In) (µg/m ³)	Tin (Sn) (µg/m ³)	Antimony (Sb) (µg/m ³)	Barium (Ba) (µg/m ³)	Lanthanum (La) (µg/m ³)	Mercury (Hg) (µg/m ³)	Lead (Pb) (µg/m ³)	Beryllium (Be) (µg/m ³)
SARB1-T1-TSP	10/6/2016	0.0000	0.0000	0.0000	0.0000	0.0017	0.0009	0.0139	0.0000	0.0002	0.0128	<0.00033
SARB1-T2-TSP	10/7/2016	0.0000	0.0014	0.0000	0.0000	0.0000	0.0028	0.0177	0.0000	0.0000	0.0038	<0.00033
SARB1-T3-TSP	10/8/2016	0.0003	0.0016	0.0036	0.0000	0.0033	0.0048	0.0215	0.0000	0.0012	0.0039	<0.00033
SARB2-T1-TSP	10/6/2016	0.0000	0.0000	0.0000	0.0000	0.0020	0.0000	0.0178	0.0000	0.0000	0.0066	<0.00033
SARB2-T2-TSP	10/7/2016	0.0017	0.0000	0.0000	0.0000	0.0006	0.0000	0.0211	0.0000	0.0000	0.0039	<0.00033
SARB2-T3-TSP	10/8/2016	0.0000	0.0000	0.0000	0.0000	0.0010	0.0049	0.0386	0.0000	0.0000	0.0051	<0.00033
SARB3-T1-TSP	10/6/2016	0.0000	0.0000	0.0000	0.0000	0.0053	0.0066	0.0150	0.0000	0.0000	0.0041	<0.00033
SARB3-T2-TSP	10/7/2016	0.0000	0.0000	0.0028	0.0000	0.0156	0.0504	0.0198	0.0000	0.0000	0.0292	<0.00033
SARB3-T3-TSP	10/8/2016	0.0000	0.0002	0.0015	0.0002	0.0043	0.0056	0.0259	0.0000	0.0000	0.0079	<0.00033
SARB4-T1-TSP	10/6/2016	0.0000	0.0006	0.0000	0.0045	0.0105	0.0000	0.0734	0.0000	0.0006	0.0325	<0.00033
SARB4-T2-TSP	10/7/2016	0.0003	0.0010	0.0000	0.0000	0.0029	0.0056	0.0170	0.0000	0.0000	0.0107	<0.00033
SARB4-T3-TSP	10/8/2016	0.0000	0.0020	0.0058	0.0000	0.0081	0.0000	0.0234	0.0000	0.0000	0.0086	<0.00033
<i>Field Duplicate</i>												
SARB5-T1-TSP	10/6/2016	0.0000	0.0000	0.0028	0.0031	0.0034	0.0028	0.0193	0.0000	0.0000	0.0069	<0.00033
SARB5-T2-TSP	10/7/2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0085	0.0282	0.0000	0.0000	0.0040	<0.00033
<i>Field Blank</i>												
SARB4-T1-TSP-FB ¹	10/6/2016	0.0000	0.0079	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0034	0.0000	<0.008
SARB2-T3-TSP-FB ¹	10/8/2016	0.0000	0.0463	0.0000	0.0000	0.0475	0.0000	0.0000	0.0158	0.0090	0.0000	<0.008
<i>Trip Blank</i>												
SARB-TB-TSP ¹	10/8/2016	0.0045	0.0000	0.0000	0.0000	0.0000	0.1808	0.0000	0.0000	0.0000	0.0000	<0.008
<i>Lab Blank</i>												
Lab Blank ¹		0.0000	0.0079	0.0000	0.0000	0.0000	0.0565	0.0000	0.0000	0.0000	0.0000	<0.008
Lab Blank ¹		0.0090	0.0802	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0056	<0.008
Lab Blank ¹		0.0000	0.0328	0.0508	0.0000	0.0000	0.0226	0.0000	0.0000	0.0000	0.0056	<0.008
Lab Blank ¹		0.0000	0.0452	0.0000	0.0000	0.0497	0.0000	0.0000	0.0000	0.0079	0.0102	<0.008

Notes: g = grams µg/m³ = micrograms per cubic meter Highlighted = concentrations are less than three times the uncertainty
m³ = cubic meters --- = not sampled/tested *Italics* = Quality assurance/quality control samples
µg = micrograms ¹ = units for these QA/QC samples are µg/filter < = Less than the laboratory reporting limit

TABLE 4
SUMMARY OF ASBESTOS ANALYTICAL DATA
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

SAMPLE I.D.	SAMPLE DATE	SAMPLE TYPE	ANALYTICAL METHOD	ASBESTOS CONCENTRATION s/mm ²	ASBESTOS TYPE
SARB1-T1-Asbestos	10/06/16	Air	AHERA - TEM	<19.00	N/A
SARB1-T2-Asbestos	10/07/16	Air	AHERA - TEM	<19.00	N/A
SARB1-T3-Asbestos	10/08/16	Air	AHERA - TEM	<19.00	N/A
SARB2-T1-Asbestos	10/06/16	Air	AHERA - TEM	<19.00	N/A
SARB2-T2-Asbestos	10/07/16	Air	AHERA - TEM	<19.00	N/A
SARB2-T3-Asbestos	10/08/16	Air	AHERA - TEM	19.00	Chrysotile (1 structure ≥5μ)
SARB3-T1-Asbestos	10/06/16	Air	AHERA - TEM	<19.00	N/A
SARB3-T2-Asbestos	10/07/16	Air	AHERA - TEM	<19.00	N/A
SARB3-T3-Asbestos	10/08/16	Air	AHERA - TEM	<19.00	N/A
SARB4-T1-Asbestos	10/06/16	Air	AHERA - TEM	<19.00	N/A
SARB4-T2-Asbestos	10/07/16	Air	AHERA - TEM	<19.00	N/A
SARB4-T3-Asbestos	10/08/16	Air	AHERA - TEM	N/A Filter Damaged	N/A
<i>Field Duplicate</i>					
SARB5-T1-Asbestos	10/06/16	Air	AHERA - TEM	<19.00	N/A
SARB5-T2-Asbestos	10/07/16	Air	AHERA - TEM	<19.00	N/A
<i>Trip Blank</i>					
SARB-TB-Asbestos	10/06/16	Air	AHERA - TEM	<7.70	N/A

Notes:

EMSL's lab report states that each of the samples except for the trip blank sample had particulate loading greater than 10%.
Samples were preprocessed at customer's request.

AHERA = Asbestos Hazard Emergency Response Act

TEM =Transmission Electron Microscopy

s/mm² = Structures per milimeter squared

< = Less than the respective laboratory test method reporting limits for each tested analyte

TABLE 5
SUMMARY OF PCB ANALYTICAL DATA
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

SAMPLE I.D.	SAMPLE DATE	Aroclor-1016 ($\mu\text{g}/\text{m}^3$)	Aroclor-1221 ($\mu\text{g}/\text{m}^3$)	Aroclor-1232 ($\mu\text{g}/\text{m}^3$)	Aroclor-1242 ($\mu\text{g}/\text{m}^3$)	Aroclor-1248 ($\mu\text{g}/\text{m}^3$)	Aroclor-1254 ($\mu\text{g}/\text{m}^3$)	Aroclor-1260 ($\mu\text{g}/\text{m}^3$)	Aroclor-1262 ($\mu\text{g}/\text{m}^3$)
SARB1-T1-PCB	10/06/16	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027
SARB1-T2-PCB	10/07/16	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027
SARB1-T3-PCB	10/08/16	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027
SARB2-T1-PCB	10/06/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB2-T2-PCB	10/07/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB2-T3-PCB	10/08/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB3-T1-PCB	10/06/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB3-T2-PCB	10/07/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB3-T3-PCB	10/08/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB4-T1-PCB	10/06/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB4-T2-PCB	10/07/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SARB4-T3-PCB	10/08/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
<i>Field Duplicates</i>									
<i>SARB5-T1-PCB</i>	<i>10/06/16</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>
<i>SARB5-T2-PCB</i>	<i>10/07/16</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>
<i>Trip Blank</i>									
<i>SARB-TB-PCB</i>	<i>10/07/16</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>	<i><0.0025</i>

Notes: PCB = Polychlorinated biphenyls
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
Italics = Quality assurance/quality control samples
< = Less than the respective laboratory test method reporting limits for each tested analyte

TABLE 6
 SUMMARY OF FORMALDEHYDE ANALYTICAL DATA
 DTSC METAL SHREDDING FACILITIES
 SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
 CONTRACT NO. 15-T4124

SAMPLE I.D.	SAMPLE DATE	Formaldehyde (µg)
SARB1-T1-FORM	10/06/16	1.9
SARB1-T2-FORM	10/07/16	1.6
SARB1-T3-FORM	10/08/16	1.9
SARB2-T1-FORM	10/06/16	2.4
SARB2-T2-FORM	10/07/16	2.0
SARB2-T3-FORM	10/08/16	1.8
SARB3-T1-FORM	10/06/16	1.8
SARB3-T2-FORM	10/07/16	1.6
SARB3-T3-FORM	10/08/16	1.7
SARB4-T1-FORM	10/06/16	2.0
SARB4-T2-FORM	10/07/16	1.8
SARB4-T3-FORM	10/08/16	2.2
<i>Field Duplicates</i>		
<i>SARB5-T1-FORM</i>	<i>10/06/16</i>	<i>2.0</i>
<i>RPD</i>		<i>0.18</i>
<i>SARB5-T2-FORM</i>	<i>10/07/16</i>	<i>1.9</i>
<i>RPD</i>		<i>0.05</i>
<i>Trip Blank</i>		
<i>SARB-TB-FORM</i>	<i>10/06/16</i>	<i><0.050</i>

Notes:

µg = micrograms

Italics = Quality assurance/quality control samples

< = Less than the respective laboratory test method reporting limits for each tested analyte

TABLE 7
SUMMARY OF TOXIC ORGANIC COMPOUNDS ANALYTICAL DATA
DTSC METAL SHREDDING FACILITIES
SA RECYCLING BAKERSFIELD (SARB), 2000 E. BRUNDAGE LANE, BAKERSFIELD, CALIFORNIA
CONTRACT NO. 15-T4124

		Benzene	Chloromethane	1,1-Dichloroethene	Ethylbenzene	4-Ethyltoluene	Freon 12 (Dichlorodifluoromethane)	Freon 11 (Trichlorofluoromethane)	1,2,4-Trichlorobenzene	Toluene	1,3,5-Trimethylbenzene	Xylene (p,m)	Xylene (Ortho)	Vinyl chloride
SAMPLE ID	DATE	Results in $\mu\text{g}/\text{m}^3$												
SARB1-T1-TOS	10/6/2016	<1.6	1.2	<2.0	<2.2	<2.5	<2.5	<2.8	<3.7	2.9	<2.5	<4.3	<2.2	<1.3
SARB1-T2-TOS	10/7/2016	<1.6	1.4	<2.0	<2.2	<2.5	2.6	<2.8	<3.7	6.0	<2.5	<4.3	<2.2	<1.3
SARB1-T3-TOS	10/8/2016	1.6	1.3	<2.0	<2.2	<2.5	3.7	7.8	<3.7	8.1	<2.5	4.6	<2.2	<1.3
SARB2-T1-TOS	10/6/2016	1.7	1.2	<2.0	<2.2	2.7	<2.5	<2.8	<3.7	12	<2.5	7.6	2.8	<1.3
SARB2-T2-TOS	10/7/2016	3.9	1.3	<2.0	5.2	3.7	5.0	4.0	<3.7	33	<2.5	17	5.6	<1.3
SARB2-T3-TOS	10/8/2016	3.1	1.4	<2.0	4.6	6.0	2.7	3.1	<3.7	25	<2.5	16	6.3	<1.3
SARB3-T1-TOS	10/6/2016	2.0	1.4	<2.0	<2.2	<2.5	6.2	4.9	<3.7	13	<2.5	7.1	2.5	<1.3
SARB3-T2-TOS	10/7/2016	4.3	1.2	<2.0	8.4	11	8.1	6.7	<3.7	47	4.1	33	12	<1.3
SARB3-T3-TOS	10/8/2016	5.0	1.2	<2.0	19	42	31	68	<3.7	66	14	83	33	<1.3
SARB3-T3-TOSB	10/8/2016	<1.6	<1.0	<2.0	<2.2	<2.5	<2.5	<2.8	<3.7	<1.9	<2.5	<4.3	<2.2	<1.3
SARB4-T1-TOS	10/6/2016	<1.6	1.3	<2.0	<2.2	<2.5	<2.5	5.5	<3.7	<1.9	<2.5	<4.3	<2.2	<1.3
SARB4-T2-TOS	10/7/2016	<1.6	1.2	<2.0	<2.2	<2.5	<2.5	<2.8	<3.7	4.4	<2.5	<4.3	<2.2	<1.3
SARB4-T3-TOS	10/8/2016	<1.6	1.2	<2.0	<2.2	<2.5	2.9	8.7	<3.7	2.9	<2.5	<4.3	<2.2	<1.3
<i>Field Duplicates</i>														
SARB5-T1-TOS	10/6/2016	1.8	1.5	<2.0	2.3	2.8	<2.5	<2.8	<3.7	12	<2.5	7.9	2.8	<1.3
SARB5-T2-TOS	10/7/2016	3.8	1.2	<2.0	5.7	7.6	5.0	4.2	<3.7	33	<2.5	22	8.0	<1.3

Notes: < = Less than the respective laboratory test method reporting limits for each tested analyte
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
Italics = Quality assurance/quality control samples